

5 [a pressure sensor that senses a pressure within said irrigation line;
6 an accumulator that stores irrigation fluid; and,]
7 a pressure sensor including a first chamber in fluid communication with said
8 irrigation line, a second chamber, and a flexible membrane that separates said first chamber
9 from said second chamber; and,
10 a controller [that is coupled to said pressure sensor and said pump to control the
11 pressure within said irrigation line] including a pressure transducer in fluid communication
12 with said second chamber.

A7 Sub B3
5. (Amended) The irrigation system of claim 4, wherein said controller varies
said pump speed in response to a variation in the irrigation line pressure sensed by said
3 pressure [sensor] transducer.

A3
10. The irrigation system of claim [9] 1, wherein said pump has a speed sensor
2 coupled to said controller.

Sub B5
13 (Amended) A medical system, comprising:
2 an irrigation system that includes;
3 an irrigation reservoir;
4 an irrigation pump that is coupled to said irrigation reservoir;
5 an irrigation line coupled to said pump;
6 [a pressure sensor that senses a pressure within said irrigation line;
7 an accumulator that stores irrigation fluid;]
8 a pressure sensor including a first chamber in fluid communication with said
9 irrigation line, a second chamber, and a flexible membrane that separates said first chamber
10 from said second chamber; and,

11 a controller [that is coupled to said pressure sensor and said pump] including a
12 pressure transducer in fluid communication with said second chamber and to control the
13 pressure within said irrigation line;
14 an aspiration system that includes;
15 an aspiration pump;
16 an aspiration line coupled to said aspiration pump;
17 an aspiration pressure sensor that senses a vacuum pressure within said aspiration
18 line;
19 a medical device that is coupled to said irrigation line and said aspiration line.

Sub B7
17. (Amended) The medical system of claim 16, wherein said controller varies
2 said pump speed in response to a variation in the irrigation line pressure sensed by said
3 pressure [sensor] transducer.

Please add new claims 33-40.

33. (New) The irrigation system of claim 1, further comprising:
2 said pressure sensor being sized to maintain the intraocular pressure of an eye into which the
3 medical device is to be inserted.

1 34. (New) The irrigation system of claim 33, further comprising an accumulator
2 in fluid communication with said second chamber.

1 35. (New) An apparatus, comprising:
2 an irrigation pump;
3 an irrigation line in fluid communication with the pump;
4 a first pressure sensor in fluid communication with the irrigation line;
5 a medical device in fluid communication with the irrigation line to provide irrigation
6 fluid;
7 an aspiration line in fluid communication with the medical device to aspirate fluid;
8 a second pressure sensor in fluid communication with the aspiration line;
9 an aspiration pump in fluid communication with the aspiration line; and,
10 a controller coupled with the first and the second pressure sensors to sense a
11 differential pressure between the irrigation line and the aspiration line and to vary a speed of
12 the irrigation pump to maintain a flow rate in the irrigation line in proportion to the flow rate
13 in the aspiration line.

1 36. (New) The apparatus of claim 35, wherein the controller is further to change a
2 power to the medical device if the differential pressure changes.

1 37. (New) The apparatus of claim 35, further comprising:
2 a first accumulator between the irrigation line and the first pressure sensor, the first
3 accumulator including a first chamber in fluid communication with the irrigation line, a
4 second chamber in fluid communication with the first pressure sensor and a flexible
5 membrane which separates the first and the second chamber.

1 38. (New) The apparatus of claim 37 wherein the first accumulator is sized to
2 maintain an intraocular pressure of an eye into which the medical device is to be inserted.

1 39. (New) The apparatus of claim 37, further comprising a second accumulator in
2 fluid communication with the second chamber.

1 40. (New) The apparatus of claim 35, wherein the controller is further to
2 determine that an occlusion of the aspiration line has occurred if the differential pressure
3 increases.